

Abstract Submitted  
for the APR17 Meeting of  
The American Physical Society

**Nuclear Checker Board Model** THEODORE LACH, Retired — The Checkerboard model of the Nucleus has been in the public domain for over 20 years. Over those years it has been described by nuclear and particle physicists as; cute, “the Bohr model of the nucleus” and “reminiscent of the Eightfold Way”. It has also been ridiculed as numerology, laughed at, and even worse. In 2000 the theory was taken to the next level by attempting to explain why the mass of the “up” and “dn” quarks were significantly heavier than the SM “u” and “d” quarks. This resulted in a paper published on arXiv.nucl-th/0008026 in 2000, predicting 5 generations of quarks, each quark and negative lepton particle related to each other by a simple geometric mean. The CBM predicts that the radii of the elementary particles are proportional to the cube root of their masses. This was realized Pythagorean musical intervals (octave, perfect 5<sup>th</sup>, perfect 4<sup>th</sup> plus two others). Therefore each generation can be explained by a simple right triangle and the height of the hypotenuse. Notice that the height of a right triangle breaks the hypotenuse into two line segments. The geometric mean of those two segments equals the length of the height of this characteristic triangle. Therefore the CBM theory now predicts that all the elementary particles mass are proportion to the cube of their radii. Therefore the mass density of all elementary particles (and perhaps black holes too) are a constant of nature.

Theodore Lach  
Retired

Date submitted: 07 Oct 2016

Electronic form version 1.4